

## Negative Declaration

1. Project title:  
Expand the southern California bear hunting area to include San Luis Obispo County and eliminate the in-season closure mechanism for ending the bear season early.
2. Lead agency name and address:  
California Department of Fish and Game  
1416 Ninth Street  
Sacramento, CA 95814
3. Contact person and phone number:  
Dr. Eric Loft, (916) 445-3555
4. Project location:  
The project area encompasses San Luis Obispo County.
5. Project sponsor's name and address:  
California Department of Fish and Game  
1416 Ninth Street  
Sacramento, CA 95814
6. General plan designation:  
Recreation
7. Zoning:  
All private and public lands  
where hunting is allowed.
8. Description of project:  
The proposed regulation change would allow bear hunting in San Luis Obispo County. This project expands the hunt area from Santa Barbara County north to include San Luis Obispo County.  
  
Beginning in summer, 2009, archery bear hunting and general bear hunting seasons would commence in San Luis Obispo County.
9. Surrounding land uses and setting:  
The majority of bear hunting in San Luis Obispo County will occur on public land managed by the Los Padres National Forest. Some private landowners will also provide access for hunters to take bears from their properties. Private land owners who do not want hunting on their property have the right to preclude hunting on their property.
10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)  
None.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Aesthetics                    | <input type="checkbox"/> Agriculture Resources              | <input type="checkbox"/> Air Quality            |
| <input type="checkbox"/> Biological Resources          | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology/Soils          |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality            | <input type="checkbox"/> Land Use/Planning      |
| <input type="checkbox"/> Mineral Resources             | <input type="checkbox"/> Noise                              | <input type="checkbox"/> Population/Housing     |
| <input type="checkbox"/> Public Services               | <input type="checkbox"/> Recreation                         | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems     | <input type="checkbox"/> Mandatory Findings of Significance |   |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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Signature

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Date

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Printed Name

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For

In addition to San Luis Obispo County, this map shows the southern portion of Monterey County and the northern portion of Santa Barbara County. The Department has developed a habitat suitability model for black bears in San Luis Obispo County. That model is based on the habitat preferences of bears for feeding, resting and breeding. Vegetation types containing large trees are preferred by bears for breeding and escape cover. Also, moist areas are preferred for drinking and for production of young, digestible grasses and forbs as forage. The compilation of these and other preferred habitat elements are shown in the model, below. Plotted on the model are the locations of scent stations which were established during the summers of 2007 and 2008, bears killed on depredation permits and bears killed on the roads in San Luis Obispo County.

## CEQA Initial Study Checklist

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>I. AESTHETICS</b>				
-- Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### DISCUSSION

a) The project will not involve any construction or land alteration and thus will not affect scenic vistas.

b) The project will not involve any construction or land alteration and thus will not damage scenic resources.

c) The project will not involve any construction or land alteration and thus will not degrade the visual character of the site and its surroundings.

d) The project will not involve any construction and thus will not create any new sources of light or glare. Bear hunting is not legal at night.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>II. AGRICULTURE RESOURCES:</b> In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. -- Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not take place on or impact farmland, so it will not involve the conversion or modification of farmland.

b) The project will not conflict with existing agricultural zoning or any Williamson Act contracts.

c) The project will not involve any construction, land alteration, or land use changes and thus will not result in the conversion of Farmland to non-agricultural use.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. -- Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, or land use changes. The project will not conflict with or obstruct implementation with the applicable air quality plan.

b) The project will not involve any construction, land alteration, or land use changes, and will not violate air quality standards or contribute substantially to any existing air quality violations.

c) The project will not involve any construction, land alteration, or land use changes. The project will not result in a cumulatively considerable net increase of any criteria pollutants for which the project region is non-attainment.

d) The project will not release cumulatively considerable pollutants nor will it alter population distribution or patterns of human activity.

e) The project will not release any odors or expose people to odor sources.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES</b>				
-- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

#### DISCUSSION

a) The project will have no impact or substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

b) The project will not involve any construction, land alteration, or land use changes. Riparian habitats and other sensitive natural communities will not be affected by the project.



c) The project will not involve any construction, land alteration, or land use changes. Wetlands will not be affected by the project.

d) The project will not involve any construction, land alteration, or land use changes. It will not interfere with the movement of native fish and wildlife species or interfere with wildlife movement corridors.

e) The project will not involve any construction, land alteration, or land use changes. It will not conflict with any local policies or ordinances protecting biological resources.

f) The project will not involve any construction, land alteration, or land use changes. It will not conflict with the provisions of any approved local, regional, state, or federal habitat conservation plans.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>V. CULTURAL RESOURCES</b>				
-- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

#### DISCUSSION

a) The project will not involve any construction, land alteration, or land use changes. It will not affect any historical resources.

b) The project will not involve any construction, land alteration, or land use changes. It will not affect archaeological resources.

c) The project will not involve any construction, land alteration, or land use changes. It will not affect paleontological resources or unique geological features.

d) The project will not involve any construction, land alteration, or land use changes. It will not disturb any human remains.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VI. GEOLOGY AND SOILS</b>				
-- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

- a) The project will not involve any construction or land alteration, and will not result in the increased exposure of people or structures to seismic and landslide risks.
- b) The project will not involve any construction or land alteration, and will not result in soil erosion or the loss of topsoil.
- c) The project will not involve any construction or land alteration, and will not result in an increased risk to people or property risk from any type of soil instability.
- d) The project will not involve any construction or land alteration, and will not create risks to life or property resulting from the movement of expansive soils.
- e) The project will not involve any construction or land alteration, and no septic tanks or waste water disposal systems will be utilized or installed as part of the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VII. HAZARDS AND HAZARDOUS MATERIALS</b>				
-- Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## **DISCUSSION**

- a) The project will not involve the transport, use, or disposal of hazardous materials.
- b) The project will not involve the transport, use, or disposal of hazardous materials.
- c) The project will not involve the transport, use, or disposal of hazardous materials.
- d) The project will not be located on a hazardous material site.
- e) The project will not be located within an airport use plan area.
- f) There are no airstrips within the project area.
- g) The project will not involve any construction, land alteration, or land use changes. It will thus not interfere with the implementation of emergency response or evacuation plans.
- h) The project will not involve any construction, land alteration, or land use changes. It will not expose people or structures to a significant risk of loss, injury, or death related to wildfire.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>VIII. HYDROLOGY AND WATER QUALITY</b>				
-- Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

j) Inundation by seiche, tsunami, or mudflow?



## DISCUSSION

a) The project will not involve any construction, land alteration, water use, or water discharge.

b) The project will not involve any construction, land alteration, or groundwater use.

c) The project will not involve any construction or land alteration, and thus will not alter drainage patterns in the project area.

d) The project will not involve any construction or land alteration, and thus will not alter drainage patterns in the project area.

e) The project will not involve any construction or land alteration, and thus will not have any impact on runoff within the project area.

f) The project will not involve any construction or land alteration, and thus will not have any adverse impacts on water quality.

g) The project will not involve any construction or land alteration. No new housing will be constructed.

h) The project will not involve any construction or land alteration. No new structures will be associated with the project.

i) The project will not involve any construction, land alteration, or land use changes. No people or structures will be exposed to new risks related to flooding as a result of the project.

j) The project will not involve any construction, land alteration, or land use changes. The risks of inundation due to seiche, tsunami, or mudflow will not change as a result of the project.



	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>IX. LAND USE AND PLANNING</b>				
-- Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, or land use changes. Thus, no established communities will be physically divided.

b) The project will not involve any construction, land alteration, or land use changes. The project will not conflict with the land use plans, policies, or regulations of the agencies with jurisdiction over the project.

c) The project will not involve any construction, land alteration, or land use changes. The project will not conflict with any habitat conservation plans or natural community conservation plans.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>X. MINERAL RESOURCES</b>				
-- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, or land use changes. Mineral resources will not be affected by the project.

b) The project will not involve any construction, land alteration, or land use changes. Mineral resources will not be affected by the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XI. NOISE</b>				
-- Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve construction or physical alteration of land, and its implementation will not involve the generation of noise levels in excess of agency standards.

b) Implementation of the project will not result in groundborne vibration or substantial groundborne noise levels. Groundborne noise associated with the project will only involve occasional pick-up truck traffic on existing public and private roads.

c) The project will not involve construction or physical alteration of land, or the creation of any permanent noise sources.

d) The project will not increase ambient noise levels.

e) The project will not be located within an airport use plan area or within two miles of a public airport or public use airport.

f) The project will not be located within the vicinity of a private airstrip.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XII. POPULATION AND HOUSING</b>				
-- Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, or the creation of new infrastructure. It will not induce population growth in or adjacent to the project area.

b) The project will not involve any construction, land alteration, or land use changes. No existing housing units will be displaced or affected.

c) The project will not involve any construction, land alteration, or land use changes. No residents of the project area or its vicinity will be displaced by the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIII. PUBLIC SERVICES</b>				
– Would the project:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, or land use changes. Public services will not be affected by the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XIV. RECREATION</b>				
– would the project:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

#### DISCUSSION

a) The project will not involve any construction, land alteration, land use changes, or population changes. The use of existing parks and recreation facilities within or adjacent to the project area will not be affected. Hunting is not allowed in local, State or National parks.

b) The project will not involve any construction, land alteration, or land use changes. No recreational facilities will be utilized or constructed as a result of the project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XV. TRANSPORTATION/TRAFFIC</b>				
-- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Result in inadequate parking capacity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction, land alteration, land use changes, or population changes.

b) The project will not involve any construction, land alteration, land use changes, or population changes. Its implementation will not result in traffic service level standards being exceeded.

c) The project will not involve the use of aircraft.



- d) The project will not involve any construction or land alteration, including road construction. It will occur on rural timberland. The project will not affect or increase traffic and road hazards.
- e) The project will not involve any construction or land alteration, and will occur on rural timberland. Emergency access within or adjacent to the project area will not be affected by the project.
- f) The project will not involve any construction or land alteration, and will occur on rural timberland. Parking capacity within or adjacent to the project area will not be affected by the project.
- g) The project will not involve any construction or land alteration, and will occur on rural timberland. It will not conflict with adopted policies, plans, or programs supporting alternative transportation.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVI. UTILITIES AND SERVICE SYSTEMS</b>				
-- Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project will not involve any construction or land alteration. Wastewater treatment requirements will not be exceeded.

b) The project will not involve any construction or land alteration, including the construction or expansion of water or wastewater treatment facilities.

c) The project will not involve any construction, land alteration, or the creation of new infrastructure. No storm water drainage facilities will be constructed or expanded as a

result of the project.

d) The project will not involve any construction, land alteration, or the creation of new infrastructure. No new or expanded water supply entitlements will be needed in order to implement the project.

e) The project will not involve any construction, land alteration, or the creation of new infrastructure. The project area consists of rural timberland, and little or no wastewater will be produced as a result of the project.

f) The project will not involve any construction, land alteration, or the creation of new infrastructure. The project area consists of rural timberland, and little or no solid waste will be produced as a result of the project.

g) The project will not involve any construction, land alteration, or the creation of new infrastructure. The project area consists of rural timberland, and its implementation will be in compliance with applicable statutes and regulations related to solid waste.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>XVII. MANDATORY FINDINGS OF SIGNIFICANCE</b>				
– Would the project:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

## DISCUSSION

a) The project is expected to result in the harvest of 20 – 50 bears from San Luis Obispo County. This level of harvest is approximately 0.0015 of the total population of bears estimated in California (30,000). Several regulatory safeguards assure that no significant impacts to the bear population occur as a result of the project. The hunting bag limit of one bear per season restricts the take of bears and equitably allocates the take among the interested public. The prohibition against the take of cubs and females accompanied by cubs insures recruitment of young into the population and protects reproductive females from hunting mortality. The general bear season for San Luis Obispo County will open concurrently with deer season in the A zone deer hunting area. The use of more than one dog for the pursuit and take of bear will be prohibited until the close of the general deer season.

It is well documented that bear populations can withstand continued, regulated sport harvest (Kemp 1972, Wakefield 1972, LeCount 1977, Poelker and Parsons 1977, Reynolds and Beecham 1977, Servheen 1989, Miller et al. 2003). In California, hunter

take, together with nonhunting mortality, appears to be less than cub recruitment. This conclusion is supported by the fact that when all available data are considered and analyzed together, they indicate that the age structure of hunter-killed bears is older than in the early 1980's, and that reported bear kill is higher. The conclusions that black bears in California have been able to sustain the current level of hunting mortality and that populations have significantly increased since the early 1980s, are also supported by these data.

The Black Bear Management Plan prepared by the California Department of Fish and Game contains a matrix for evaluating the health of California's bear resource. This decision matrix for monitoring the black bear population specifies criteria for bear population parameters that are monitored. Should any two of the criteria be met for a given year, changes in hunting regulations would be prescribed to reduce the effect of hunting mortality of the bear resource. These parameters are; median age of hunter-killed bears, percent females in the harvest, total harvest numbers, and kill per hunter effort and population size. Therefore, the strategy for bear harvest management is to monitor the effects of hunting on the bear population, and make changes in hunting accordingly. This management approach precludes the need for an in-season closure mechanism. Consequently, regulatory language to end the bear season when 1,700 bears are reported killed is unnecessary and insignificant to the bear population.

In California and other states, hunters using dogs are known to select for male bears because of their larger size (Litvaitis and Kane 1994). There are concerns that by allowing a higher proportion of bears to be taken by hunters not using dogs, the number of females in the harvest will increase to the potential detriment of the bear population. However, over the past six years, a statistically significant difference ( $p > .05$ ) could not be detected in the proportion of female bears killed by hunters using or not using dogs. Finally, one of the parameters measured in the population monitoring matrix is percent females in the harvest. In 2006, females were 39 percent of the harvest.

The effects of hunting on bear populations vary with the intensity of the harvest and the degree that the population is regulated by forage. Since bear populations in California are ultimately limited by habitat, bear numbers will vary with the capability of the habitat to support them. Therefore, if the carrying capacity of bear habitat increases due to favorable habitat conditions, such as high mast crop (acorns and fruit) production or direct habitat manipulation (i.e., meadow enhancement/restoration or timber practices that increase forage items), cub production and recruitment (survivorship) is expected to increase independent of hunting mortality.

During the bear's annual cycle, cubs are born in the winter den and accompany the female for 14-16 months. Approximately 0.8 cubs are produced by each adult female annually [females reproduce in alternate years and the average litter size is 1.6 cubs] (Piekielek and Burton 1975, Koch 1983, Department of Fish and Game 1996). Under normal conditions, a bear population can increase by about 20 percent annually (Barrett 1986). In unhunted and lightly hunted populations, a large number of cubs typically die before being recruited into the population as adults (four years old). The majority of the mortality occurs after the cubs separate from the adult female at approximately 14-16 months of age (Elowe and Dodge 1989). Only enough young bears generally survive to replace bears dying from all forms of mortality during the previous year. If there is new additional habitat available or improved habitat conditions to support additional animals,

a proportionate number of additional bears may be sustained within that local area. These observations regarding bear population dynamics are well supported in the scientific literature (Jonkel and Cowan 1971, Kemp 1976, Bunnell and Tait 1981, Young and Ruff 1982, Lindzey et al. 1983, Schwartz and Franzmann 1991, Miller et al. 2003).

#### Additive and Compensatory Mortality

Bunnell and Tait (1981) conducted an extensive survey of the scientific literature when they produced their publication, *Population Dynamics of Bears*. Citing the results of black bear research throughout the west, they concluded that black bear populations exhibit compensatory mortality. Compensatory mortality is a population mechanism in which an increase in one form of mortality will generally result in the decrease of another type of mortality. Because the highest rates of mortality occur in subadult age classes in bear populations (Jonkel and Cowan 1971, Kemp 1972, Poelker and Hartwell 1973, LeCount 1977, Rogers 1977, Elowe and Dodge 1989), subadult age classes tend to have greater survival when compensatory mechanisms are active. In other words, when bear populations are reduced below the capacity of their habitat by a mortality factor such as hunting, more subadult bears will survive to allow the population to expand to near the capacity of the habitat.

The effect of compensatory mortality is realized by static survivorship of individuals at low harvest levels (Figure 1). This situation occurs whenever density dependent factors are removing animals from the population and total mortality is not too great. In other words, because the level of mortality is dependent upon the relative number of animals present, one mortality factor (e.g., hunting) will substitute (or compensate) for another mortality factor (e.g., starvation). This compensation appears to operate in California black bear populations up to a total mortality of approximately 20 percent, or 80 percent of carrying capacity. The proposed action will remove less than 10 percent of the population annually.

A review of density-dependent population regulation for black, brown, and polar bears concludes that although all populations are ultimately regulated by density-dependent processes, the mechanisms by which density influences population dynamics have not been demonstrated for any bear population (Taylor, et al. 1994). In this review, black bear density-dependent regulation is reviewed by Garshelis (1994), and brown bear density-dependent regulation is reviewed by McLellan (1994). Taylor, et al (1994) suggest that a reasonable range for density-dependent mechanisms to act is between 75 percent and 90 percent of carrying capacity for black and brown bears.

A recent study on brown bears in Alaska showed that hunted populations exhibited greater cub survival than unhunted populations (Miller et al. 2003). This supports the notion of density dependent mechanisms acting in the bear populations.

Garshelis (1994) reviewed a number of black bear studies throughout North America in an effort to either accept or reject the hypothesis that black bear populations exhibited compensatory mortality. Data from black bear populations believed to exhibit compensatory mortality were scrutinized from Alberta (Kemp 1972, Kemp 1976, Young and Ruff 1982), Washington (Lindzey and Meslow 1977), Wisconsin (Anderson and Trauba 1991), and Arkansas (Clark 1991). While density dependant mechanisms seemed to be detected in every case, the available data were either limited or alternate

hypotheses could not be discounted. Ultimately, the idea that compensatory mortality existed in black bear populations could neither be accepted nor discounted. Black bear managers were cautioned against presuming that density dependant mechanisms existed in black bear populations.

Additive mortality acts to remove animals from the population regardless of population density (Figure 2). Each form of additive mortality will affect the population more-or-less independent of other mortality factors. In this way, populations increase in size when many young survive and they decrease in size when young survival is relatively low. At high mortality rates, both compensatory and additive mortality scenarios can appear similar. For black bears in California, if total mortality exceeded 20 percent, all forms of mortality could work in an additive fashion and result in population declines.

The adaptive population response to mortality is recruitment of young animals to adulthood. With additive mortality, the response or recruitment of young is slower than with compensatory mortality. The area between the curves represents the additional surplus individuals available with hunting mortality being compensated by natural mortality. To maximize yield whether additive or compensatory in bear populations, approximately 20 percent of the population should be removed annually. Additive mortality results in a lower ability of the population to respond, compared to compensatory mechanisms because recruitment is lower. In both situations a harvestable surplus exists (Anderson and Burnham 1976, Peek 1986).

As indicated above, compensatory mortality will provide for suitable subadult survival and population recruitment only within the biological capability of the population. The biological capability of a population is generally its capability to reproduce. Because reproduction in bear populations is density independent and largely a function of nutritional factors (Jonkel and Cowan 1971, Rogers 1976, Beecham and Reynolds 1977, LeCount 1977, Bunnell and Tait 1981, Elowe and Dodge 1989), high mortality rates or population reductions are not as likely to trigger a compensatory reproductive response as seen in other large mammals that have reproductive strategies regulated by their densities. Thus, an apparent threshold of mortality is established for a bear population in which a population is maintained through compensatory mechanisms as long as the total mortality does not exceed the population's density independent reproductive capabilities.

However, it is important to recognize that there are numerous reports in the scientific literature where this "threshold" level of mortality has been exceeded. Miller (1990) stressed that when decisions regarding bear harvest rates are made, it is important not to assume compensatory impacts of hunting, although such compensation may exist. Ginzburg, et al. (1990) concluded that when assessing the risk of extinction possibilities, conservative estimates can be made from models that omit density dependence. The authors also specify that estimating a populations risk of extinction requires long term studies, 10 and 20 year data sets are too short. After reviewing the parameters of the bear population, the increase in bear numbers since the mid 1980s do not indicate that Californian black bears are at any risk of extinction.

Examples of this threshold level have been described by LeCount (1986) and Elowe (1989). LeCount felt that hunter-caused mortality appeared to be additive rather than compensatory in an Arizona population of black bears. The population he studied

experienced a 24 percent annual hunter-caused mortality. In cases such as this, it appears that total mortality is so high that compensatory mechanisms are insufficient to maintain populations through higher survival. Hence, all forms of mortality become additive. LeCount also felt that cub losses were high because heavy hunting pressure resulted in fewer resident adult males, thus increasing immigrant males which tended to kill cubs with greater frequency. Regardless of the cause of mortality, it is apparent that once mortality has become excessive, compensatory mechanisms may fail.

In the Arizona example, all age and sex classes of bears could be killed by hunters. Furthermore, 12.5 percent of known cub mortality was hunter caused. In California, bear hunting regulations prohibit the take of cubs as well as females with cubs. There remains the possibility of illegal killing of cubs or the illegal killing of sows with cubs during the hunting season, however, there are no reports from field wardens or citations issued for these acts. Estimates of black bear harvest rates in California using techniques previously described (Fraser et al. 1982, Fraser 1984), indicate a harvest rate of less than 10 percent since 1985. This is well below the 24 percent hunter-caused mortality observed in the Arizona population. In fact, California's bear populations are believed to experience less than 20 percent mortality from all factors (hunting, disease, depredation kills, starvation, illegal kill, etc.) as determined by several sources.

In summary, there are numerous studies in the scientific literature where authors have indicated that hunting mortalities appeared to be additive in the population that they studied. This apparently was true because the sum total of all mortalities was so high that compensatory mechanisms were insufficient to maintain populations through increased survival. Conversely, there are numerous reports in the scientific literature where hunting mortalities appear to be compensatory because the total level of mortality the population is experiencing is within the population's capability to sustain itself through increased survival. However, as indicated above, whether additive or compensatory, a harvestable surplus exists (see figures above).

The proposed regulations will allow limited sport hunting of black bears in the San Luis Obispo. Information regarding bear hunting, statewide, has been collected by the Department since 1957 when black bear hunting tags were first required. This information was supplemented in 1962 when the Department initiated the annual Game Take Hunter Survey. The information collected by these two methods provide data on the time of year bears are killed, the county and area within the county where bears are killed, the home address of the bear hunter, the sex of the bear killed, the age of the bear killed (beginning in 1982), and the method(s) of take used by successful bear hunters. This information indicates that bear hunters are highly mobile. It is not uncommon for a hunter to travel hundreds of miles from his or her residence to hunt bears. Data also indicate the most common method of take is the use of trailing hounds to tree bears and centerfire rifles or pistols to kill bears. Since the use of dogs to assist in taking bears is the most common method, bear populations that experience the most hunting pressure are those that exist in areas with good road access which can be used by hunters to locate fresh bear tracks. Location of kill data from bear tags and information from the Game Take Hunter Survey related to hunting effort in given counties indicate that bear hunting pressure is not constant in a given geographical area from year to year. Factors such as road access vary due to weather conditions or administrative closures by the landowner-management agency and distribution of forage



items (mast crops) varies resulting in changes of locations where tagholders hunt bears.

Based on this information, it is possible that some populations of black bears receive higher hunting pressure than others. However, the data collected over the past 50 years, does not indicate that significant, negative environmental impacts have resulted from regulated, legal sport harvest of bears in any area of the State. The age composition of the statewide bear populations for the years 2003 through 2006 are presented in Figure 4. These data indicate that bears taken in California are primarily in the 1.5 to 4.5 year age class and that the proportions of each age class represented in the harvest are similar from 2003 through 2006.

The wide distribution of black bears over approximately 53,000 square miles and monitoring of the population statewide have not produced any evidence of subpopulations declining in any part of the State. Instead, evidence of range expansion by some subpopulations is being documented.

#### Effects of Hunting on the Age Class Structure

Evaluation of population data indicates that this level of hunting mortality will reduce nonhunting mortality to a level of approximately 10 percent or about 2,000 bears. This is expected to result in an overall survivorship of bears greater than 80 percent. As evidenced by the rising trend observed in the median age of bears taken since the 1985 regulation changes (median age of the bear harvest has increased from 2.5 in 1983), the structure of the population should remain at a level where the population is largely composed of adult (four plus years) or breeding-age bears. As indicated previously, there appears to be no significant differences in the age structure of hunted bear populations and unhunted bear populations in the State's national parks (Redwood and Yosemite national parks).

#### Influence of Hunting on Natural Mortality

All available evidence indicates that California's bear population is regulated by habitat capability and that survivorship is density dependent (Kemp 1972 and 1976, Bunnell and Tait 1981). In other words, when the population increases towards the carrying capacity of the habitat, bear survivorship decreases. Conversely, if bear densities are lower than those that can be supported by the habitat, survivorship and recruitment tend to increase. As demonstrated by computer population simulation modeling of the State's bear population, the population can support hunting mortality along with all other known forms of mortality and maintain existing population levels. Under the proposed project, approximately 1,900 bears are expected to be taken by hunters, statewide. Illegal kill of bears is estimated at approximately 25 percent of legal harvest (approximately 525 bears) and natural mortality (all mortality that is not a result of legal or illegal hunting) is expected to be held at approximately 10 percent. By comparison, in unhunted populations total mortality is often in excess of 20 percent (Jonkel and Cowan 1971, Kemp 1976, Graber 1982).

Starvation can play a role in nonhunting mortality. Jonkel and Cowan (1971), Kemp (1976), and Rogers (1977) observed starvation in black bear populations. Starvation is probably most common in subadults as they disperse. Intraspecific predation can be a significant mortality source for both subadult and adult female bears (Stafford 1995).

In summary, nonhunting mortality can occur from a variety of sources. Data indicate that levels of the various types of bear mortality are often interrelated. For example, if mortality as a result of starvation increases in one year, the level of intraspecific competition related mortalities may decline. Again, as described previously, it is not the specific cause of mortality that is ultimately important, but the overall level of mortality that the population is experiencing.

#### Effects of the Use of Dogs to Assist in Hunting Bears

The use of dogs (as provided in Section 265, Title 14, CCR) to assist in the take of bears is included in the proposed project in response to public recreational demand, and the fact that it is not expected to cause a significant negative effect on the bear population. The current regulated use of dogs to take bears has not resulted in significant negative effects on bears, other wildlife, or their habitats in the past.

Trailing hounds were used to assist in hunting bears in California prior to any laws being enacted to protect wildlife. Although the Legislature has indicated that the use of dogs to assist in taking bears and other wildlife is acceptable, some individuals are philosophically opposed to hunting bears with trailing hounds. It is important to realize that dogs are used only to assist in taking bears, they do not actually kill bears. The proposed project requires that hunters use methods described in sections 353 or 354, Title 14, CCR, to kill bears. In most cases, bears are trailed by a hunter with hounds until the bear climbs a tree. Since bears are capable of easily climbing trees, they may escape immediate or direct contact by dogs. The Department is unaware of any biological evidence to indicate that the regulated use of dogs to assist in hunting bears has had, or will be likely to have, a significant negative effect on the State's bear resource. As indicated by similar age class structures in unhunted park populations and harvested bears, the use of dogs to assist in bear hunting at current and proposed levels does not appear to harm bear populations in California. If the use of dogs to assist in taking black bears was having significant negative effects on the bear population, it would be indicated by data currently collected regarding population parameters. This would be demonstrated by a decrease in the median age structure, decreased hunter success coupled with increased hunter effort, lower population estimates, increased proportion of females killed by hunters, and/or a decrease or absence of an age class cohort (especially cubs or yearlings). All available evidence indicates that the State's bear population is large (estimated 33,000) and self-sustaining. All age classes are represented at expected levels, and both the median age and hunter success have increased since 1982. When these factors are considered in total, they support the conclusion that the use of dogs to assist in hunting bears has not had a significant negative effect on the State's bear population. The resulting level of hunting take, not the method of take, is the factor determining the effect on the bear population. Hunters using trailing hounds to take bears are expected to have higher hunter success and select for larger (usually male) bears when compared to hunters that do not use dogs (Elowe 1991, Litvaitis and Kane 1994). Additionally, hunters using trailing hounds are thought to have lower wounding losses because of increased ability to track wounded animals and are better able to detect a sow with cubs because the dogs also tree the cubs.

As indicated above, data collected from the State's bear population does not indicate

that the use of dogs to assist in hunting bears is having a negative impact. It is possible that some dogs will catch a bear on the ground and that the bear and/or the dog will then be injured or killed. In some cases, dogs have been injured or killed by bears (Elowe 1991). However, based on the past experience of Department personnel familiar with individuals that use dogs to assist in hunting wildlife, serious injuries to dogs are rare.

If the use of dogs to assist in hunting bears was having a significant negative effect, the effects should be observed in data collected from the bear population. Evidence of negative impacts to the bear population include decreasing bear numbers, low cub recruitment, or age cohorts missing or reduced in number. These trends have not been observed. Studies addressing impacts to bears being run by dogs found that bears experimentally chased survived the winter, thus indicating that stress from being chased was short term (Massopust and Anderson 1984, Allen 1984, Elowe 1991).

#### Effects of Using Radio Telemetry Equipment for Bear Hunting

Over the past 30 years, radio telemetry equipment has become less expensive. Bear hunters using dogs routinely place radio collars on their dogs. Houndsmen indicate that these collars are used for locating lost dogs and for training young dogs. Houndsmen also state that radio telemetry equipment is an indispensable tool which allows them to retrieve their dogs in a timely manner before the dog is potentially injured after wandering onto a road (Elowe 1991).

Radio telemetry equipment is already widely used by houndsmen for bear hunting. Therefore, any negative impacts to the bear population associated with the use of radio telemetry equipment would be detected as originating with the use of dogs. As previously stated, there is no evidence to suggest that the use of dogs (or dogs with radio collars) for hunting bears is negatively impacting the bear resource.

b) The project will not have impacts that are cumulatively considerable. Hunting of bears has occurred throughout most of California since prehistoric time. The long term effects of hunting on bears might be expected to show effects to the genetics or social structure of the bear populations.

#### Impacts on the Gene Pool

Brown, et al (2009) report the population genetics of black bears in California. They show that bears in San Luis Obispo County have genetic composition similar to bears in the southern Sierra Nevada Mountains. This suggests a past radiation of bears from the Sierra Nevada to the Tehachapi Mountains. Brown, et al (2009) found no significant difference in allelic richness between bears in the central coast region, including San Luis Obispo County, and bears in the southern Sierra Nevada Mountains. Further, they state that bears in the central coast region show levels of genetic diversity on par with other bear populations (Clarke et al. 2001, Paetkau and Strobeck 1994, Paetkau et al. 1998).

The black bear in California has experienced sport hunting removal as a game mammal since 1948. In these hunted areas, black bears display high levels of genetic diversity (Brown, et al, 2009). Evidence suggests that sport hunters tend to select for larger male

bears, and the harvested segment of the population is male biased in most years. It is reasonable to conclude that large male bears, typically older than 10 years, have had adequate opportunity to pass their genetic material prior to such animals being taken by sport hunters. In addition, State and Federal parks as well as remote wilderness areas, where sport hunting has little or no influence on the bear population, comprise over 10 percent of the best bear habitat in the State. In these unhunted populations, there would be no impact on the gene pool thereby retaining all the naturally occurring genetic variability. In the remainder of the State which is open to hunting, the season, bag limit, and access limitations prevent sport hunting from producing a negative effect on the genetic diversity in the black bear population.

#### Impacts on the Social Structure

Interactions with other bears (intraspecific competition) is probably a major source of nonhunting mortality, especially for subadult males. Black bears live solitary lives. Cubs are born in the winter den and remain with the mother through the first year of their life. They generally den with the female as yearlings. When they emerge from the den in spring, they disperse to new areas. Usually subadult females will remain in the general area, but do not associate with other bears. However, subadult males tend to disperse over large areas (Lee and Vaughan 2003). During this time, they are vulnerable to numerous mortality factors, including aggressive behavior by adult bears (primarily males). Numerous researchers have documented adult males killing subadult males as they disperse (Swenson 2003, Swenson, et al 1997, Wielgus and Bunnell 1994, Jonkel and Cowan 1971, Poelker and Hartwell 1973, Kemp 1976, Rogers 1987). Intraspecific predation has also been found to be a significant mortality source for adult females (Garshelis 1994, Department of Fish and Game 1997, Stafford 1995). LeCount (1987) indicated that adult male bears were a significant source of mortality to young cubs in Arizona. However, other studies suggest that this is not the case (Graber 1982, Elowe and Dodge 1989). As Elowe and Dodge point out "social order was once thought to limit bear densities through establishment of territories, but it now appears to play a minor role." This also is the case in California and other western states where investigators have determined that bears do not establish and defend territories (Koch 1983).

LeCount (1993) and McLellan (1993) have both recently suggested that dispersing subadult bears may be responsible for cub killing. Therefore, killing larger resident male black bears may retard recruitment of cubs into the population because immigrating subadult male bears, which would normally be killed or run off by resident males, will kill more cubs. While this situation may occur in some populations, other studies have shown that black bear populations increased after the removal of adult males when subadult bears immigrated into the area (Kemp 1976 and 1972, Ruff 1982, Young and Ruff 1982). The increase in the presence of subadult bears did not appear to effect cub survival. In a retrospective study of brown bears in Sweden, researchers (Swenson, et al. 1997) suggested that killing one adult male had a population effect of killing 0.5 to 1 adult female. This was suggested to be the result of immigrating males replacing those killed by hunters. A study of brown bears in Canada concluded that increased hunting mortality of older adult males coincided with an influx of younger immigrant males (Stringham, 1980, Wielgus and Bunnell, 1994). This apparently contributed to low reproductive rates and a population decline. However, Miller, et al (2003) showed increased cub survival in hunter brown bear populations compared to unhunted

populations. McLellan (2005) concluded that the immigrant male hypothesis was not supported in brown bears.

The interval of breeding for brown bears in this study was three years, compared to two years in black bears in California. Also, the total reproductive rate of brown bears in this study (0.46 cubs /adult female/yr.) was about half that of California black bears (0.8 cubs/adult female/ yr.). The reduced reproductive rate of brown bears in the study made them more susceptible to population declines than California black bears. If the removal of adult bears through regulated hunting was acting to limit California black bear populations, age cohorts would be expected to be missing in heavily hunted areas. Since all age cohorts are present at predictable levels, there is no evidence to suggest that this is occurring in California. If subadults are more responsible for cub killing, it is also important to recognize that almost half of the male black bears killed by hunters each year are nonbreeding subadults (less than four years old) thereby limiting any impacts.

#### Impacts on Habitat

No significant impacts on habitat are expected from the hunting of black bears in California. Hunter impacts on the habitat are reduced by the large range and solitary habits of the black bear as well as a defined maximum harvest and short hunting season. Although several hunting strategies exist, many hunters utilize existing roads to determine location of fresh bear signs, before initiating the hunt. Some hunters utilize dogs to assist in taking bears. Low intensity hunting strategies may reduce the impact on the habitat by decreasing the hunter's effort in a given area.

The harvest of 1,800 -1,900 black bears from 53,000 square mile range has the potential to reduce the black bear population over a large area for less than one year. The reduction in the black bear population has the potential to provide for some improvement in black bear habitat. The black bear's diverse and seasonal forage preferences further reduce impacts of specific environmental changes. Furthermore, black bears are readily able to adjust to new food sources as alternate sources become available.

Lead poisoning has been a chronic and significant cause of migratory bird (primarily waterfowl) mortality associated with hunting in some areas of North America. Birds ingest spent lead shotgun pellets and scavengers may ingest fragments of lead bullets in carcasses or gut piles (Fry 2003). The ingested lead is converted to soluble form, and absorbed into tissues, which can have lethal effects. Secondary poisoning of predatory birds can also occur when they feed on birds carrying lead pellets embedded in body tissues (Fry 2003). The use of nonlead projectiles is required for the hunting of bears in San Luis Obispo County.

#### Other Species

The proposed regulation change is not expected to result in a change in statewide black bear population levels and, therefore, there are no expected impacts on other wildlife species. Regulated black bear hunting has occurred annually since 1948. Predator/prey relationships involving bears have remained intact since then. There is no available evidence to indicate that the proposed project will have any measurable

impact (either negative or positive) on either bear prey species or other predators within the project area. Analysis of the proposed project does not indicate a potential to effect any threatened or endangered species or their habitats.

c) The project will not have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

## REFERENCES

- Allen, Bradford R. 1984. Experimental Pursuit of Black Bears with Trained Bear Dogs. Proc. East Workshop Black Bear Manage. Res. 7:54-58.
- Anderson, D.R. and K.P. Burnham. 1976. Population ecology of the Mallard VI. The effect of exploitation on survival. USDI Fish and Wildl. Serv. Res. Pub. No. 128. 66 pp.
- Anderson, and Trauba. 1991. Black bear density on Stockton Island and mainland Wisconsin. Unpubl. rep., Univ. Wis., Stevens Point. 9pp.
- Barrett, R. 1986. Population models for black bear and mountain lion in California. Final Report, Project C-1421. California Department of Fish and Game, Sacramento, CA.
- Barrett, R. 2000. POP MODBB with additive morality. unpublished.
- Beecham, J. J., and D. G. Reynolds. 1977. Home Range Activities and Reproduction of Black Bears in West-Central Idaho. Int. Conf. Bear Res. and Manage. 4:181-190.
- Brown, S.K., J.M. Hull, D.R. Updike, S.R. Fain and H.B. Ernest. 2009. Black bear population genetics in California: signatures of population structure, competitive release and historical translocation. J. Wildl. Manage. In Press.
- Bunnell, F.L. and D.E.N. Tait. 1981. Population Dynamics of Bears -- Implications. P.75-98 in: C. W. Fowler and T.D. Smith eds. Dynamics of Large Mammal Populations. John Wiley and Sons. New York. N.Y.
- California Department of Fish and Game. 1997. Annual Performance Report - Federal Aid in Wildlife Restoration Program. Grant W-65-R, Subgrant II, Project 6.
- California Department of Fish and Game. 1996. Annual Performance Report - Federal Aid in Wildlife Restoration Program. Grant W-65-R, Subgrant II, Project 6.
- Clark, J. 1991. Ecology of two black bear (*Ursus americanus*) populations in the interior highlands of Arkansas. Ph.D. Thesis, Univ. Ark., Fayetteville. 228 pp.
- Clarke, C.M., D. Immell and S.K. Wasser. 2001. Technical considerations for hair genotyping models in black bears. Western Workshop for Black Bear Research and Management. 7:24-29.

- Elowe, K. 1991. Bear hunting with hounds: techniques and effects on bears and the public. East. workshop black bear res. and manage. 10:101-109.
- Elowe, K.D. and W.E. Dodge. 1989. Factors Affecting Black Bear Reproductive Success and Cub Survival. J. Wildl. Manage. 53:962-968.
- Fraser, D., J.F. Gardner, G.B. Kolenosky, and S. Strathearn. 1982. Estimation of Harvest Rate of Black Bears from Age and Sex Data. Wildl. Soc. Bull. 10(1):53-57.
- Fraser, D. 1984. A Simple Relationship Between Removal Rate and Age-Sex Composition of Removals for Certain Animal Populations. J. Appl. Ecol. 21:97-101.
- Fry, D. Michael. 2003 Assessment of Lead Contamination Sources Exposing California Condors. Final Report, Habitat Conservation Planning Branch, CA Dep. Fish and Game. 85pp.
- Garshelis, David. 1990. Monitoring Effects of Harvest on Black Bear Populations in North America: A Review and Evaluation of Techniques. Proc. East. Workshop on Black Bear Res. and Manage. 10:120-144.
- Garshelis, D. L. 1993. Monitoring Black Bear Populations: Pitfalls and Recommendations. Proc. West. Black Bear Workshop 4:123-144.
- Garshelis, D.L. 1994. Density-dependant population regulation of black bears. Pages 3-14 in M. Taylor, Ed. Density-dependent population regulation of black, brown, and polar bears. Int. Conf. Bear Res. and Manage. Monogr. Series No. 3. 43 pp.
- Ginzburg, L.R., S. Ferson, and H.R. Akcakaya. 1990. Reconstructability of Density Dependence and the Consecutive Assessment of Extinction Risks. cons. Biol. 4(1)
- Graber, D.M. 1982. Ecology and Management of Black Bears in Yosemite National Park. Coop. Parks Studies Unit, Univ. Calif. Davis, Tech. Rep. No. 5. 206 pp.
- Jonkel, C.J. and I. McT. Cowan. 1971. The Black Bear in Spruce-Fir Forest. Wildl. Monogr. 27. 57 pp.
- Kemp, G.A. 1972. Black Bear Population Dynamics at Cold Lake, Alberta, 1968-1970. Int. Conf. Bear Res. and Manage. 2:26-31.
- Kemp, G.A. 1976. The Dynamics and Regulation of Black Bear, *Ursus americanus*, Population in Northern Alberta. Int. Conf. Bear Res. and Manage. 3:191-197.
- Koch, D.B. 1983. Population, Home Range and Denning Characteristics of Black Bears in Placer County, California. M.S. Thesis. Calif. State Univ., Sacramento. 71 pp.
- LeCount, Albert L. 1977. Some Aspects of Black Bear Ecology in the Arizona Chaparral. Int. Conf. Bear Res. and Manage. 4:175-180.
- LeCount, Albert. 1986. Causes of Black Bear Mortality. Arizona Game and Fish Department, Phoenix, AZ. Pp. 75-82.

- LeCount, A. 1993. Intrinsic Population Regulation Among Black Bears. Proc.West. Black Bear Workshop 4:103-110.
- Lee, D.J. and M.R. Vaughan. 2003. Dispersal movements by subadult American black bears in Virginia. *Ursus* 14(2):162-170.
- Lindzey, F.G., K.R. Barber, R.D. Peters, and E.C. Meslow. 1983 Responses of a Black Bear Population to a Changing Environment. *Int. Conf. Bear Res. and Manage.* 6:57-64.
- Lindzey, F. and E. Meslow. 1977. Population characteristics of black bears on an island in Washington. *J. Wild. Mgmt.* 41:408-412.
- Litvaitis, J. and D. Kane. 1994. Relationship of hunting technique and hunter selectivity to composition of black bear harvest. *Wild. Soc. Bull.* 22:604-606.
- Massopust, J. and R. Anderson. 1984. The response of black bears to being chased by hunting dogs. *Proc. East. Workshop black bear Manage. Res.* 7:59-65.
- McLellan, B. 1994. Density-Dependent Population Regulation of Brown Bears. Pages 15-24 in M. Taylor, Ed. *Density-Dependent Population Regulation of Black, Brown, and Polar Bears.* *Int. Conf. Bear Res. and Manage. Monograph Series No. 3.* 43 pp.
- McLellan, B.N. 2005. Sexually selected infanticide in grizzly bears: the effects of hunting on cub survival. *Ursus* 16(2):141-156.
- Miller, S.D. 1989. Population Management of Bears in North America. *Int. Conf. Bear Res. and Manage.* 8:357-374.
- Miller, S.D. 1990. In My Opinion: Impact of Increased Bear Hunting on Survivorship of Young Bear. *Wildl. Soc. Bull.* 18(4) 462-467.
- Miller, S.D., R.A. Sellars, and J. A. Keay. 2003. Effects of hunting on brown bear cub survival and litter size in Alaska. *Ursus* 14(2):130-152.
- Paetkau, D., and C. Strobeck. 1994. Microsatellite analysis of genetic variation in black bear populations. *Molecular Ecology.* 3:489-495.
- Paetkau, D., G.F. Shields, and C. Strobeck, 1998. Gene flow between insular, coastal, and interior populations of brown bears in Alaska. *Molecular Ecology.* 7:1282-1292.
- Peek, J.M. 1986. *A Review of Wildlife Management.* Prentice-Hall, Englewood Cliffs, New Jersey. 486 pp.
- Piekielek, W, and T.Burton. 1975. A Black Bear Population Study in Northern California. *Calif. Fish and Game.* 61(1):4-25.
- Poelker, R. J. and H. D. Hartwell. 1973. Black Bear of Washington. *Wash. State Game Dept. Biol. Bull.* 14. 180 pp.
- Poelker, R. J., and L. D. Parsons. 1977. Black Bear Hunting to Reduce Forest Damage. *Int. Conf. Bear Res. and Manage.* 4:191-194.



Reynolds and Beecham 1977. Home range activities and reproduction of black bears in west central Idaho. *Int. Conf. Bear Res. and Manage.* 4:181-190.

Rogers, L. L. 1976. Effects of Mast and Berry Crop Failures on Survival, Growth, and Reproductive Success of Black Bears. *Trans. North Am. Wildl. and Nat. Resour. Conf.* 41:431-438.

Rogers, L. L. 1977. Social Relationships, Movements, and Population Dynamics of Black Bears in Northeastern Minnesota. Ph.D. Thesis. Univ. Minnesota, Minneapolis. 194 pp.

Rogers, L. L. 1987. Effects of Food Supply and Kinship on Social Behavior, Movements, and Population Growth of Black Bears in Northeastern Minnesota. *Wildl. Monogr.* 97:72 pp.

Schwartz, C.C. and A.W. Franzmann. 1991. Interrelationships of Black Bears to Moose and Forest Succession in the Northern Coniferous Forest. *Wildl. Monogr.* 113. 58 pp.

Servheen, Christopher. 1989. The Status and Conservation of the Bears of the World. *Int. Conf. Bear Res. and Manage. Monogr. Series No. 2.* 31 pp.

Stafford, R. 1995. Preliminary observations on den selection by female and subadult black bears in Northwestern California. *Trans. West. Sec. Wild. Soc.* 31:63-67.

Stringham, S.F. 1980. Possible impacts of hunting on the grizzly/brown bear, a threatened species. *Int. Conf. Bear Res. and Manage.* 4:337-349.

Swenson, J.E. 2003. Implication of sexually selected infanticide for hunting of large carnivores. In M. Festa-Bianchet and M. Apollonio, editors. *Animal behavior and wildlife management.* Island Press, Covelo, CA, USA.

Swenson, J.E., Sandegren, A. Soderberg, A. Bjarvall, R. Franzen, and P. Wabakken, 1997. Infanticide Caused by Hunting of Male Bears. *Nature.* 386 (3) 450-451.

Taylor, M., D.L. Garshelis, B. McLellan and A. Derocher. 1994. Density-Dependant Population Regulation of Black, Brown, and Polar Bears. *Ninth Int. Conf. Bear Res. and Manage. Monograph No. 3,* 43 pp.

Wakefield, Gary C. 1972. A Summary of the Black Bear Population Characteristics in Pennsylvania. *Int. Conf. Bear Res. and Manage.* 2:\*-\*

Wielgus, R.B. and F.L. Bunnell, 1994. Dynamics of a Small, Hunter Brown Bear population in Southwestern Alberta, Canada. *Biol. Cons.* 67:161-166.

Young, B.F., and R.L. Ruff. 1982. Population Dynamics and Movements of Black Bears in East Central Alberta. *J. Wildl. Manage.* 46:845-860.